

REMARKS

Claims 1-3, 5-24, 26-34, and 36-44 are pending in the application and are currently rejected. Claims 1, 3, 11, 18, 20, 27, 31, 33, 36 and 40 have been amended. Claims 4, 25, 35 and 45-47 have been cancelled without prejudice. In light of the amendments and remarks herein, reconsideration of claims 1-3, 5-24, 26-34, and 36-44 is respectfully requested.

Allowable Subject Matter

Applicants note with appreciation the Examiner's indication that claims 18, 35 and 36 present allowable subject matter, if rewritten in independent form including all of the limitations of the base claims and any intervening claims. Accordingly, Applicant's have rewritten claim 36 in independent form, and have amended independent claim 31 to include the language of dependent claim 35.

Amendments to the Specification

The Specification has been amended to correct several typographical errors and to substitute the number of a now-issued patent for the application serial number.

Amendments to the Claims

While Applicants believe that the previously presented claims are patentable over all of the art cited in the Office Action, as well as all other references submitted by Applicants, the claims have nonetheless been amended as follows in order to expedite the allowance of the claims. The amendments are, therefore, made without prejudice or disclaimer, and Applicants reserve the right to pursue the original scope of the claims as provided prior to the cancellation or amendment of the claims, such as through continuation practice.

Claim 1 is amended to recite that radiation "is applied to said portion of the oral cavity during multiple treatment sessions so as to administer a selected total dose of radiation to said portion." Support for the amendment is found in the specification and in the original claims as filed. (See, e.g., ¶¶ 15-17, 117 and 120.)

Claim 3 is amended to correct a typographical error.

Claim 11 is amended to correct a typographical error.

Claim 18 is amended as noted above to rewrite the claim in independent form including all of the limitations of the base claims and any intervening claims.

Claim 20 is amended to recite irradiating an oral cavity with radiation “during separate treatment sessions such that a radiation power in a range greater than 10 mW to about 10 W is administered to the oral cavity during each treatment session.” Support for the amendment is found in the specification and in the original claims as filed. (See, e.g., ¶¶ 15 and 166.)

Claim 27 is amended to particularly point out and distinctly claim the subject matter which Applicants regard as the invention, in response to the Examiner’s objection under 35 U.S.C. § 112.

Claim 31 is amended to include the subject matter of now-cancelled claim 35, which the Examiner found to be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

Claim 33 is amended to clarify the language of the claim.

Claim 36 is amended as noted above to rewrite the claim in independent form including all of the limitations of the base claims and any intervening claims.

Claim 40 is amended to correct a typographical error.

As such, the amendments to claims 1, 3, 11, 18, 20, 27, 31, 33, 36 and 40 do not add any new matter.

Claim Rejections - 35 U.S.C. § 112

Claim 27 stands rejected as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants have amended claim 27 accordingly.

Claim Rejections - 35 U.S.C. § 102

Claims 1-3, 5-14, 16, 17, 20-22, 26-29, 40-42 and 44 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 6,056,548 to Neuberger et al. (herein "Neuberger"). These claims are novel, however, because Neuberger fails to disclose all of the elements recited in the claims. For example, amended claim 1 recites that the "radiation is applied to said portion of the oral cavity during multiple treatment sessions so as to administer a selected total dose of radiation to said portion," which Neuberger does not disclose.

Rather, Neuberger discloses a device and procedure in which the total dosage is flexible and ongoing. Neuberger does not disclose a selected total dose that would be applied using the procedure. Neuberger does disclose a treatment in which the optimum effect can be achieved using a treatment time in the range of 1-3 minutes. (Neuberger Col. 1:38-41.) Thus, Neuberger appears to disclose a procedure in which the treatment time for any individual session may vary within that range to achieve optimum results. Neuberger also discloses that the treatments are applied apparently indefinitely: "The process depends also on a regular scheduled application of the method with the specially prepared dental pastes or liquids over an extended period of time." (Neuberger Col. 4:21-24.) Regardless, given the disclosure of Neuberger, the total dose that would be applied using the procedure is unknown.

Similarly, Neuberger does not disclose "radiation power in a range greater than 10 mW to about 10 W is administered to the oral cavity during each treatment session," as recited in amended claim 20. Neuberger specifically discloses power in a range of 10 mW or less, and typically 2-3 mW. (Neuberger Cols. 1:40, 4:17-18, 7:8-11 and 7:22-24.) Neuberger touts the low power of the device and procedure as an advantage, by stating that the procedure employs powers that were thought in the art to be too low to be effective: "Doses, i.e. power [mwatts] and treatment time, are in the range where prior art such as Wilson et al. would state treatments were ineffectual."

Neuberger also does not disclose "administering [a] drug" as recited in claim 40. In the office action, Neuberger's disclosure of "photosensitizers" is equated to a disclosure of administering a "drug." However, Neuberger does not equate the two terms. Neuberger defines

photosensitizers as dyes and not as drugs: “In principle this can occur with all photosensitizers because as a class they are dyes.” (Neuberger Col. 3:63-64.)

Claims 2-3, 5-14, 16, 17, 21-22, 26-29, 41-42 and 44 are novel for at least the same reasons that Claims 1, 20 and 40 from which they depend are novel. Thus, claims 1-3, 5-14, 16, 17, 20-22, 26-29, 40-42 and 44 are novel and patentable over Neuberger.

Claims 31-34 and 37-39 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 6,699,040 to Hahn et al. (herein “Hahn”). These claims are novel, however, because Hahn fails to disclose all of the elements recited in the claims. For example, amended claim 31 recites a compound having a “refractive index [that] is in a range of about 1.3 to about 1.8.” This is the subject matter of amended dependent claim 35, which the Examiner stated was allowable if included with all of the limitations of the base claims and any intervening claims, as Applicants have done in the amendments above.

Claims 32-34 and 37-39 are novel for at least the same reasons that Claim 31, from which they depend, is novel. Therefore, claims 31-34 and 37-39 are novel and patentable over Hahn.

Claim Rejections - 35 U.S.C. § 103

Claims 15, 23 and 24

Claims 15, 23 and 24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Neuberger in view of U.S. Patent 6,026,828 to Altshuler (herein “Altshuler”). Claims 15, 23 and 24 however, are patentable, because there is no suggestion or motivation to combine Neuberger and Altshuler. Neuberger teaches that one way to improve the device is to use a single wavelength to both activate and degrade the photosensitizer, as opposed to having a separate wavelength for each. (See Col. 5:5-25.) Thus, Neuberger teaches away from any process that would require the use of an additional wavelength to degrade the photosensitizer. Absent some cited disclosure from either reference indicating that the disclosed wavelengths of Altshuler would allow for the improved method of practicing Neuberger, there would be no motivation to combine the references, because the resulting device or process, according to Neuberger, may be less improved.

Claim 19

Claim 19 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Neuberger in view of U.S. Patent 6,135,774 to Hack et al. (herein "Hack"). Claim 19, however, is patentable, because, in combination, Neuberger and Hack do not disclose all of the required elements. For example, as discussed above, the cited references in combination fail to disclose that "radiation is applied to said portion of the oral cavity during multiple treatment sessions so as to administer a selected total dose of radiation to said portion." Further, there is no express motivation to combine both references given that each is directed to distinct objectives.

Claims 30

Claim 30 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Neuberger in view of U.S. Patent 6,623,513 to Biel (herein "Biel"). Claim 30, however, is patentable, because, in combination, Neuberger and Biel do not disclose all of the required elements. For example, as discussed above, the cited references in combination fail to disclose that "radiation power in a range greater than 10 mW to about 10 W is administered to the oral cavity during each treatment session," as recited in amended claim 20. Further, there is no express motivation to combine both references given that each is directed to distinct objectives.

Claim 43

Claim 43 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Neuberger in view of Biel. Claim 43, however, is patentable, because, in combination, Neuberger and Biel do not disclose all of the required elements. For example, as discussed above, the cited references in combination fail to disclose "administering [a] drug" as recited in claim 40. In the office action, Neuberger's disclosure of "photosensitizers" is equated to a disclosure of administering a "drug." However, Neuberger does not equate the two terms. Neuberger instead defines photosensitizers as dyes and not as drugs: "In principle this can occur with all photosensitizers because as a class they are dyes." (Neuberger Col. 3:63-64.)

Similarly, though Biel discloses the introduction of photosensitizers, the passage from Biel cited in the office action does not refer to drugs when it uses the term "photosensitizer" or

equate the two terms. Furthermore, even if Biel were referring to drugs, there could be no motivation to combine the references, because each disclosure would be referring to two different types of substances – Neuberger to dyes and Biel to drugs.

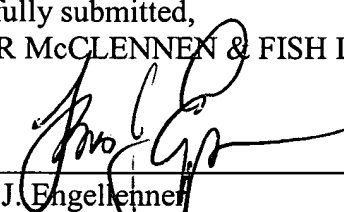
Finally, claims 15, 19, 23, 24 and 30 are each patentable for at least the same reasons that claim 1 is patentable, and claim 43 is patentable for at least the same reasons that claim 40 is patentable.

CONCLUSION

In summary, the above-identified patent application has been amended and reconsideration is respectfully requested for all the reasons set forth above. In the event that the amendments and remarks are not deemed to overcome the grounds for rejection, the Examiner is kindly requested to telephone the undersigned representative to discuss any remaining issues.

Respectfully submitted,
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